UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/614,468	07/11/2000	Mead C. Killion	12463US02	2071

7590 08/14/2003

McAndrews Held & Malloy LTD
500 West Madison Street 34th Floor
Chicago, IL 60661

EXAMINER
LAO, LUN S

ART UNIT	PAPER NUMBER
2643	4

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/614,468	KILLION ET AL.	
	Examiner	Art Unit	
	Lun-See Lao	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 July 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Introduction

1. Claim 1-8 of U.S. application 09/076,533 filed on 05/12/98 are presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 9-12 and 19-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Berland (US PAT. 4,142,072).

Consider claims 1-2, Berland teaches a microphone assembly comprising:

a front inlet tube (see fig.5 (13));

a rear inlet tube (11);

a microphone cartridge (7) having a front inlet port (2) acoustically coupled to the front inlet tube (13) and a rear inlet port (3) acoustically coupled to the rear inlet tube (11);

an actuator switch (1) being movable between a first position in which the rear inlet tube is plugged (see fig.1) and a second position in which the rear inlet tube is unplugged (see fig.2); and

circuitry (see fig.3) for sensing (by sound pressure) whether the actuator switch (see fig.5, (1)) is in the first position or the second position, and for selecting an output

based upon the position sensed (by sound pressure and see col.2 line 53-col.3 line 9), and the circuitry (see fig.3) inherently comprises an electronic contact and sensor switch (by sound pressure selecting the proportion a/b and see col.2 line 53-col.3 line 9).

Consider claims 9-11 and 19-21, Barland teaches the microphone assembly of the further comprising a housing (see fig.1), and wherein the circuitry (see fig.3) is at least partially integral to the housing (see col.2 line 53-col.3 line 9); and the circuitry (see fig.3) is at least partially integral to the microphone cartridge (see col.2 lines 24-25); and the output selected is input to hearing aid circuitry (see col.2 line 23-col.3 line 9).

Consider claim 12, Barland teaches a microphone assembly comprising:

a microphone cartridge having a diaphragm (membrane and see fig.1 (8));

a first inlet tube (2) acoustically coupled to a first side of the diaphragm (8);

a second inlet tube (3) acoustically coupled to a second side of the diaphragm (8);

an actuator switch (1) being movable between a first position in which the second inlet tube is plugged (see fig.1) and a second position in which the second inlet tube is unplugged (see fig.2); and

circuitry (see fig.3) for selecting a first output when the actuator switch (see fig.11) is in the first position (see fig.1), and a second output when the actuator switch is in the second position (see fig.2 and col.2 line 53-col.3 line 9).

Consider claims 22-23, Berland teaches a method of operating a microphone comprising:

plugging a sound inlet tube (see fig.1 3);

sensing that the sound inlet tube is plugged;

selecting a first output based on sensing (by sound pressure) that the sound inlet tube is plugged;

unplugging the sound inlet tube (3);

sensing (by sound pressure) that the sound inlet tube is unplugged (see fig.2); and

selecting a second output based on sensing that the sound inlet tube is unplugged (see col.2 line 53-col.3 line9), and further comprising inputting the inherently selected output to hearing aid circuitry (see fig.3 and col.2 53-col.3 line 9).

Consider claims 24-25, Berland teaches a method of operating a microphone comprising:

receiving an actuator switch (see fig.1, 1) in a first position in which a sound inlet tube is plugged;

sensing (see fig.3) that the actuator switch (1) is in the first position; receiving the actuator switch in a second position in which the sound inlet tube is unplugged (see fig.2);

sensing (see fig.3) that the actuator switch is in the second position; and selecting a first output if the actuator switch (1) is in the first position and a second output if the actuator switch (1) is in the second position (see col.2 line 53-col.3 line 9)

and the further comprising inputting the inherently selected output to hearing aid circuitry (see col.2 line 53-col.3 line3).

Consider claims 26-27, Berland teaches a method of operating a microphone comprising:

plugging a sound inlet tube (see fig.1 (3));

unplugging the sound inlet tube (3);

sensing (by sound pressure) whether the sound inlet tube is plugged (see fig.1) or unplugged (see fig.2); and selecting an output based on the sensing (by sound pressure and see col.2 line 53-col.3 line 9), and the further comprising inputting the inherently selected output to hearing aid circuitry 9see col.2 line 53-col.3 line 9).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3-4 and 13-14 and 7,17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berland (US PAT 4,142,072) in view of Ruegg (US PAT. 3,875,349).

Consider claims 3-4 and 13-14 Berland teaches the actuator switch is in one of the first and second positions (see fig.1), but Berland does not teach clearly the microphone assembly of the electronic contact and sensor switch comprises first and second conductors; and the microphone assembly of the actuator switch has an

electrical contact mounted therewith for providing electrical conduction between the first and second conductors.

However, Ruegg teachesthe microphone assembly of the electronic contact and sensor switch (see fig.2, (23)) comprises first and second conductors (13,14); and the microphone assembly of the actuator switch (23) has an electrical contact mounted therewith for providing electrical conduction between the first and second conductors (13,14 and see col.2 line 60-col.3 line).

Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Ruegg into Berland to improved construction of hearing aid which combines the advantages of a hearing aid equipped with a microphone having direction characteristics with a hearing aid equipped with a microphone having spherical sensitivity characteristic while avoiding the drawbacks present when only using a microphone in a hearing aid having one or the other of such sensitivity characteristics.

Consider claims 7 and 17 Berland teaches the microphone assembly of the circuitry inherently selects an output having higher gain when the actuator switch is in first (omnidirction) position, and an output having lower gain when the actuator switch is in the second position (direction and see col.2 line 53-col.3 line 9).

6. Claims 5-6, 8 and 15-16, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berland (US PAT 4,142,072) in view of Killion (US PAT. 6,101,258).

Consider claims 8 and 18, Barland does not teach the microphone assembly of the circuitry selects an output having lower environmental noise reduction when the actuator switch is in the first position, and an output having higher environmental noise reduction when the actuator switch is in the second position.

However, Killion teaches the microphone assembly of the circuitry selects an output having lower environmental noise reduction when the actuator switch is in the first position (omnidirection), and an output having higher environmental noise reduction when the actuator switch is in the second position (direction)(see col.3 lines 23-66).

Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Killion into Barland to provide improved speech intelligibility in noise to the wearer of a small in the ear hearing aid.

Consider claims 5 –6 and 15-16, Berland teaches the circuitry selects an equalized output when the actuator switch is in the second position in response to no conduction between the first and second conductors (see col.2 line 53-col.3 line 9), but Berland does not clearly teaches the microphone assembly of the circuitry (see fig.3) selects a non-equalized output when the actuator switch (see fig.2, 1) is in the first position (onmidirection) in response to conduction between the first and second conductors provided by the electrical contact.

However, Killion teaches the microphone assembly of the circuitry (see fig.1) selects an non-equalized (62) output when the actuator switch (see fig.1, 62) is in the first position (omnidirection), and an equalized (40) output when the actuator switch (see fig.1, 50) is in the second position (direction), and the microphone assembly of the

circuitry (see fig.1) selects a non-equalized (62) output when the actuator switch (see fig.1, 55) is in the first position (onmidirection) in response to conduction between the first and second conductors (55) provided by the electrical contact.

Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Killion into Barland to provide improved speech intelligibility in noise to the wearer of a small in the ear hearing aid.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Johanson (US PAT 3,975,599) is cited to show other related microphone for hearing aid and communications applications having switchable polar and frequency response characteristics.

8. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (703) 305-2259 The examiner can normally be reached on Monday-Friday from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Curtis Kuntz, can be reached on (703) 305-4708.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (703) 306-0377.

Lao,Lun-See
Patent Examiner
US Patent and Trademark Office
Crystal Park 2
(703305-2259

DUC NGUYEN
PRIMARY EXAMINER